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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,133	01/28/2004	Stanislas Bourdeaut	Q79492	3585
23373 7590 01/18/2008 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER BRANDT, CHRISTOPHER M	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 01/18/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/765,133

Applicant(s)

BOURDEAUT, STANISLAS

Examiner

Christopher M. Brandt

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

This Action is in response to applicant's arguments filed on November 2, 2007. **Claims 1-11** are still pending in the present application. **This Action is made FINAL.**

### ***Response to Arguments***

Applicant's arguments filed November 2, 2007 have been fully considered but they are not persuasive.

The argued features, i.e., a wireless communication system in which different transfer modes correspond to different bit rates corresponding to different modulation schemes and the protocol architecture uses radio link control layer that can operate in an acknowledged mode or in a non-acknowledged mode, in which method, in a transfer mode corresponding to the highest bit rates, acknowledgment information is sent in the non-acknowledged mode from a radio link control receiver to a radio link control sender and can be taken into account by the radio link control sender, reads upon the cited references as follows.

Hunzinger is discussing a CDMA system that uses different modulation schemes which are allocated for use at different data rates. Hunzinger's invention can be applied to assign multiple modulation schemes across a range of possible data rates using modulation scheme messages. In addition, Hunzinger teaches that in different acknowledgment delays, which are time for sending an acknowledgment or a non-acknowledgment after receiving a frame, may be assigned across a range of possible data rates. Moreover, a different number of ARQ channels may be assigned across a range of possible data rates, because more ARQ channels are needed to send ACK or NAK messages at higher data rates. Therefore, Hunzinger discloses the limitation,

"a method of optimizing the performance of a mobile radio system in which different transfer modes correspond to different bit rates corresponding to different modulation schemes and protocol architecture uses ARQ channels that can operate in an acknowledged mode or in a non-acknowledged mode, in which method, in a transfer mode corresponding to higher data rates, ACK or NAK messages are needed to be sent from a receiver to a sender and can be taken into account by the sender.

Hunzinger showed ACK or NAK messages are needed to be sent from a receiver to a sender, however did not specifically show radio link control layer and teach that in a transfer mode corresponding to the highest bit rates, acknowledgement information is sent in the non-acknowledged mode from a receiver to a sender and was modified by Leppisaari to show that it would have been obvious to one of ordinary skill in the art to modify Hunzinger and have acknowledgement information sent in the non-acknowledged mode from a receiver to a sender.

With regard to applicant's argument that neither Hunzinger nor Leppisaari teaches or suggests that in a transfer mode corresponding to the highest bit rates, acknowledgment information is sent in the non-acknowledged mode from a radio link control receiver to a radio link control sender, the examiner respectfully disagrees. As the applicant has pointed out, the wireless terminal sends a channel request to the network, and in response, the network sends a specific assignment message. Therefore, using the broadest reasonable interpretation, the next action performed by the wireless terminal would be a response/acknowledgment to the specific assignment message. The wireless terminal can then propose to the network the unacknowledged RLC mode (page 11 lines 1<sup>st</sup>-12). Using the broadest reasonable interpretation, the proposal is read as the acknowledgement information. Therefore, Hunzinger in view of

Leppisaari disclose the limitation, "in a transfer mode corresponding to the highest bit rates, acknowledgment information is sent in the non-acknowledged mode from a radio link control receiver to a radio link control sender."

With regard to applicant's argument that Leppisaari fails to teach or suggest a start sequence number (SSN) and a received block bitmap (RRB) in acknowledgement/non-acknowledgment (ACK/NACK) messages, the examiner respectfully disagrees. Leppisaari discloses that the network can receive the packet channel request sent by the wireless terminal, which comprises the bit pattern, where the bit pattern (i.e. 110101) contains the sequence number (in this case 1) and the received block bitmap (page 9 lines 7-29). As noted in the previous Office Action, this feature is taken directly from the 3GPP Technical Specification TS 44.060, however, Leppisaari also shows this feature with the example given on page 9 lines 7-14 (also see figures 4a and 4b). Therefore, Lepisaari discloses the limitation, "a start sequence number (SSN) and a received block bitmap (RRB) in acknowledgement/non-acknowledgment (ACK/NACK) messages."

As a result, the argued features are written such that they read upon the cited references.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-2, 4, 6-9** are rejected under 35 USC 103(a) as being unpatentable over **Hunzinger et al. (US PG PUB 2002/0172192 A1, hereinafter Hunzinger)** in view of **Leppisaari et al. (WO 01/20924 A1, hereinafter Leppisaari)**.

Consider **claim 1**. Hunzinger et al. (hereinafter Hunzinger) disclose a method of optimizing the performance of a mobile radio system in which different transfer modes correspond to different bit rates corresponding to different modulation schemes and the protocol architecture uses ARQ channels that can operate in an acknowledged mode or in a non-acknowledged mode, in which method, in a transfer mode corresponding to higher data rates, ACK or NAK messages are needed to be sent from a receiver to a sender and can be taken into account by the sender

(paragraph 109, read as in CDMA, different modulation schemes are allocated for use at different data rates. The concepts of the present invention may be applied to assign multiple modulation schemes across a range of possible data rates using modulation scheme messages. Different acknowledgment delays (time for sending an acknowledgment message (ACK) or a non-acknowledgement message (NAK) after receiving a frame/slot/packet) may be assigned

across a range of possible data rates. A different number of ARQ channels may be assigned across a range of possible data rates, because more ARQ channels/slots (e.g. odd and even channels) are needed to send ACK or NAK messages at higher data rates. The concepts of the present invention may be applied to assign a number of ARQ channels across a range of possible data rates using ARQ channel messages. It is also noted that Hunzinger discloses a MS (mobile station) and a BS (Base Station) read as receiver and sender).

Hunzinger discloses the claimed invention except he fails to explicitly use the term the radio link control layer and teach in a transfer mode corresponding to the highest bit rates, acknowledgement information is sent in the non-acknowledged mode from a receiver to a sender and can be taken into account by the sender.

However, Leppisaari discloses the radio link control layer and teach in a transfer mode corresponding to the highest bit rates, acknowledgement information is sent in the non-acknowledged mode from a receiver to a sender and can be taken into account by the sender (page 10 line 26 – page 11 line 12, read as the bit in the RLC\_MODE field is 1, indicating that the wireless terminal proposes the unacknowledged mode. The network sends the wireless terminal in response to the packet channel request a specific assignment message, wherein the network assigns radio resources to the wireless terminal establishing for the wireless terminal an open ended TBF connection, according to the proposal of the wireless terminal).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Leppisaari into the invention of

Hunzinger in order to avoid constant breaks due to the establishment and release of close ended TBF connection of specific lengths (column 6 lines 16-23).

Consider **claim 2 and as applied to claim 1**. Hunzinger and Leppisaari disclose a method wherein said transfer modes include the General Packet Radio Service (GPRS) mode and the Enhanced General Packet Radio Service (EGPRS) mode (Leppisaari; column 12 lines 36-38).

Consider **claim 4 and as applied to claim 1**. Hunzinger and Leppisaari disclose a method wherein said acknowledgment information is taken into account by an RLC sender to estimate transmission quality (Hunzinger; paragraph 58).

Consider **claims 6-8 and as applied to claim 1**. Hunzinger and Leppisaari disclose a mobile station, mobile radio system equipment, and a mobile radio system including means for implementing a method according to claim 1 (Hunzinger; paragraph 9).

Consider **claim 9 and as applied to claim 1**. Hunzinger and Leppisaari disclose wherein the non-acknowledged mode is General Packet Radio Service (GPRS) mode or Temporary Block Flow (TBF) Mode (page 10 lines 30-36).

**Claims 3** is rejected under 35 USC 103(a) as being unpatentable over **Hunzinger et al. (US PG PUB 2002/0172192 A1)** in view of **Leppisaari et al. (WO 01/20924 A1)** and further in view of **Puharinen (8309700 Advanced Topics in Telecommunications)**.

Consider **claim 3 and as applied to claim 1**. Hunzinger and Leppisaari disclose the claimed invention except they fail to explicitly state wherein said acknowledgment information



includes a Starting Sequence Number (SSN) and a Received Block Bitmap (RBB) sent in an acknowledgement/non-acknowledgment (ACK/NACK) message.

However, Puharinen disclose wherein said acknowledgment information includes a Starting Sequence Number (SSN) and a Received Block Bitmap (RBB) sent in an acknowledgement/non-acknowledgment (ACK/NACK) message (paragraph 2 in section 6. Error Control).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Puharinen into the methods of Hunzinger and Leppisaari in order to determine whether a block was correctly / incorrectly received and to associate each bit with a correct element (paragraphs 2 and 3 in section 6. Error Control).

**Claim 5** is rejected under 35 USC 103(a) as being unpatentable over **Hunzinger et al. (US PG PUB 2002/0172192 A1)** in view of **Leppisaari et al. (WO 01/20924 A1)**, and further in view of **Balachandran et al. (US Patent 6,567,375 B2)**.

Consider **claim 5 and as applied to claim 4**. Hunzinger and Leppisaari disclose the claimed invention except they fail to explicitly mention wherein said transmission quality estimate is used for radio link adaptation.

However, Balachandran et al. (hereinafter Balachandran) disclose wherein said transmission quality estimate is used for radio link adaptation (column 3 lines 48-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Balachandran into the methods of

Hunzinger and Leppisaari in order to be able to test the radio link and then help provide the improvements (column 3 lines 34-59).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 10-11** are rejected under 35 USC 102(b) as being anticipated by **Leppisaari et al.** (WO 01/20924 A1).

Consider **claim 10**. Leppisaari discloses a mobile station comprising:

a radio link control (RLC) transmitter which receives acknowledgment/non-acknowledgement (ACK/NACK) messages transmitted by an RLC receiver, said messages comprising a start sequence number (SSN) and a received block bitmap (RRB); and a mean for, in a transfer mode corresponding to Enhanced General Packet Radio Service (EGPRS), taking into account SSN and RRB information transmitted in a non-acknowledged mode (figure 4a and 4b, page 9 lines 7-14, page 10 line 26 – page 11 line 12, read as a wireless terminal can send resource requests and receives responses, wherein these packets include bit patterns (i.e. 110101), which in this case has a sequence number of 1. It is also noted that this is taken directly from the 3GPP Technical Specification TS 44.060).

Consider **claim 11**. Leppisaari discloses a mobile communication network equipment comprising:

a radio link control (RLC) transmitter which receives acknowledgment/non-acknowledgement (ACK/NACK) messages transmitted by an RLC receiver, said messages comprising a start sequence number (SSN) and a received block bitmap (RRB); and a mean for, in a transfer mode corresponding to Enhanced General Packet Radio Service (EGPRS), taking into account SSN and RRB information transmitted in a non-acknowledged mode (figure 4a and 4b, page 9 lines 7-14, page 10 line 26 – page 11 line 12, read as the network can receives resource requests and sends responses, wherein these packets include bit patterns (i.e. 110101), which in this case has a sequence number of 1. It is also noted that this is taken directly from the 3GPP Technical Specification TS 44.060).

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street

Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Brandt whose telephone number is (571) 270-1098.

The examiner can normally be reached on 7:30a.m. to 5p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.



Christopher M. Brandt  
C.M.B./cmb

January 15, 2008



WILLIAM TROST  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600